AMENDMENTS TO THE CLAIMS

1. (Currently amended) A method for production of three-dimensional bodies by successive fusing together of selected areas of a powder bed, which parts correspond to successive cross sections of the three-dimensional body, ~~which~~ the method ~~comprises the following method steps~~comprising:

~~application of~~applying a powder ~~layers~~layer to a work table,

fusing said powder layer by supplying energy from a radiation gun according to an operating scheme determined for the powder layer to said selected area within the powder layer~~, fusing together that area of the powder layer selected according to said operating scheme for forming~~ such that the powder in said selected area is fused into a cross section of said three-dimensional body~~, a three-dimensional body being formed by successive fusing together of successively formed cross sections from successively applied powder layers, characterized in that,~~

calculating an energy balance ~~is calculated~~for said selected area, ~~it being determined in the calculation~~said calculating including

determining whether energy radiated into the selected area ~~from the surroundings of the selected area~~is sufficient to maintain a defined working temperature of the selected area, and

solving a thermal conductivity equation for a given temperature distribution of the selected area.

2. (Currently amended) The method as claimed in claim 1, ~~characterized in that, in addition to said energy for fusing together the selected area,~~ where said supplying energy from a radiation gun also includes ~~energy for~~ heating the selected area to a defined working temperature ~~is supplied if the result of the energy balance calculation is~~ the calculated energy balance indicates ~~that sufficient~~ there is insufficient energy ~~for maintaining~~ to maintain ~~an intended working temperature of~~ the selected area ~~is not present, a~~ at said defined working temperature ~~of the selected area then being achieved~~.

3. (Cancelled)

4. (Currently amended) The method as claimed in ~~any one of the preceding claims~~ claim 1 or 2, ~~characterized in that~~ the method further comprising:

dividing the selected area ~~is divided~~ into a set of separate areas,

calculating an energy ~~balance being calculated~~ for each of said ~~set of~~ separate areas, and

determining whether there is sufficient energy to maintain the selected area at said defined working temperature by summing the energies of said separate areas.

5. (Cancelled)

6. (Currently amended) An arrangement for producing a three-dimensional product, which ~~arrangement comprises~~ the arrangement comprising:

a work table on which said three-dimensional product is ~~to be~~ built up,

a powder dispenser ~~which is arranged so as to distribute~~that distributes a thin layer of powder on the work table ~~for,~~ thereby forming a powder bed,

a radiation gun ~~for delivering~~that fuses ~~energy to~~ the powder together by delivering energy thereto, ~~fusing together of the powder then taking place,~~

~~means for guiding~~a beam guide that guides the beam emitted by the radiation gun over said powder bed ~~for forming~~such that the beam forms a cross section of said three-dimensional product by fusing together parts of said powder bed, and

a control computer ~~in~~ which

stores information about successive cross sections of the three-dimensional product ~~is stored~~, which cross sections build up the three-dimensional product, ~~where the control computer is intended to control said means for guiding the radiation gun over the powder bed~~

controls the beam guide according to an operating scheme ~~forming a cross section of said three-dimensional body, said three-dimensional product being formed by successive fusing together of successively formed cross sections from by the powder dispenser, characterized in that the control computer is also arranged so as to calculate~~and

calculates an energy balance for at least one part area within each powder layer~~, it being~~ by determining ~~determined in the calculation~~ whether energy radiated into the part area ~~from the surroundings of the part area~~ is sufficient to maintain a defined working temperature of the part area and solving a thermal conductivity equation for a given temperature distribution of the part area.

7. (Currently amended) The arrangement as claimed in claim 6, ~~characterized in~~ ~~that~~where the control computer ~~is arranged so as to control~~controls ~~said~~ the beam guide according to the operating scheme ~~for supply of~~such that, in addition to said energy for fusing together powder layers, the radiation gun delivers energy for heating the powder layer to a defined working temperature if the calculated energy balance indicates there is insufficient energy to maintain the selected area at said defined working temperature~~if the~~ ~~result of the energy balance calculation is that the operating scheme is not providing~~ ~~sufficient energy for maintaining an intended working temperature of the part area, a defined~~ ~~working temperature of the part area then being maintained~~.

8. (Cancelled)

9. (Currently amended) The arrangement as claimed in any one of claims 6~~-8~~or 7, ~~characterized in that the control computer is arranged so as to~~where the control computer further:

divides~~divide~~ the surface within each powder layer into a set of separate areas,

calculates an energy ~~balance~~being calculated for each of said ~~set of~~separate areas, and

determines whether there is sufficient energy to maintain the selected area at said defined working temperature by summing the energies of said separate areas.

10 – 12. (Cancelled)

13. (New) The method of claim 1, where said calculating an energy balance includes assuming that the entire selected area has the same temperature.

14. (New) The method of claim 1, where said calculating an energy balance includes assuming that the temperature distribution during fusion is stationary.